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AGC of Texas

Highway, Heavy, Utilities & Industrial Branch



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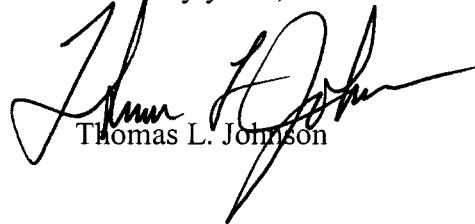
**RE: ADVANCE NOTICE OF PROPOSED RULE MAKING FOR WORK ZONE SAFETY
29-CFR PART 630 (DOCKET No. FHWA-2001-11130) - 26**

Dear Sir/Madam:

Please find enclosed comments on the referenced docket from the Associated General Contractors of Texas (AGC of Texas).

Thank you for allowing us to comment.

Sincerely yours,



Thomas L. Johnson

:dk
Enclosure

cc: Brad Sant, ARTBA

AGC of Texas Comments on the
ADVANCE NOTICE OF PROPOSED RULE MAKING FOR WORK ZONE SAFETY
29 CFR Part 630 (Docket No. FHWA-2001-11130)
Federal Register Notice of Wednesday, February 6, 2002

General Questions

- 1. Should there be a National policy to promote improved mobility and safety in highway construction and maintenance? If so, should the National policy be incorporated into the regulation or issued separately as guidance that outlines guidelines and best practices for implementation?*

AGC of Texas Response:

The FHWA should take the lead in developing a national policy with regards to mobility and safety in highway construction and maintenance work zones. The policy should be comprehensive yet broad enough to permit flexibility for DOT's to deal with varied situations. The policy should require DOT's and other entities as appropriate to develop and implement their own policies in concert with the FHWA.

The policy should contain specific design parameters for the use of positive protection between the traveling public and the work zone. Attachment 1 is an extract from the Texas Department of Transportation Roadway Design Manual. This is an excellent document that provides specific design parameter when position protection is required. It removes most of the subjectivity in the design process.

The policy should establish that the FHWA and the DOT's are the responsible parties and regulating entities for the enforcement of proper traffic control at work zones. The policy should require traffic control plans be developed under the oversight of and sealed by a licensed professional engineer. The policy should further state that since many factors are considered during TCP development, the assessment of its effectiveness should remain with transportation authorities and not OSHA.

The policy should further clarify that the limits of this policy be at the interface between the work zone and the traveling public. Contractor operations WITHIN the work zone should not be subject to similar controls. For example, there is a NIOSH research document that indicates WZ traffic control devices are needed WITHIN the work zone to control the contractor's equipment, vehicles and workers on foot. This is not acceptable. Special interest groups are trying to create a market for WZ safety products through regulation.

The national policy should require DOT's to make work zone safety a contract pay item. Barricades should be set up as an all-inclusive pay item by the month for the duration of the project. Special items like electronic message boards or concrete barriers should have separate pay items.

TCP should be designed and included in the project plans. Each contractor can bid on the plan as a part of the project. Owners would have at their disposal all the general conditions that exist in the contract to enforce the performance and maintenance of the TCP.

2. *Are the current provisions of 23 CFR 630, subpart J adequate to meet the mobility and safety challenges of road construction and maintenance projects encountered at all stages of project evolution? If they are not adequate, what are the provisions and/or sections that need to be enhanced and/or modified to ensure mobility and safety in and around work zones?*

AGC of Texas Response:

The current regulations are not adequate to meet the safety and mobility needs of road construction and maintenance projects. Specific engineering and design guidelines should be included in the policy. Prescriptive requirements should be avoided to preserve engineering flexibility to deal with changing/varying field conditions. The traffic control and work zone safety consideration of projects vary significantly. Attachment 1 is used by Texas DOT for the analysis of pavement drop off and work zone configurations for the use of positive protection.

3. *Should work zone regulations be stratified to reflect varying levels and durations of risk to road users and workers, and disruptions to traffic? What would be the most appropriate stratification factors (e.g., duration, length, lanes affected, Average Daily Traffic (ADT), road classification, expected capacity reduction, potential impacts on local network and businesses)?*

AGC of Texas Response:

Some sort of design table should be developed to help provide guidance as to varied risk. We are concerned that the risk to the road users in the form of “delays” will be assessed equally with the risk to the construction workforce in the form of “death or injury”. Many factors should be considered but not to the detriment of the worker’s safety.

4. *Currently, there are several definitions for work zone, as defined by the MUTCD, ANSI D16 (proposed), NCUTLO and NHTSA. These definitions, even though similar in basic structure and implication, differ in length and the degree of detail addressed. Should there be a common National definition for work zone to bring about uniformity? If so, what should the common National definition be?*

AGC of Texas Response:

As with the development of a standard national policy on mobility and work zone safety, it follows that the definition of a work zone be included in the national policy. Uniformity is essential to providing clear guidance throughout the country.

these are addressed should be the responsibility of each DOT

The definition should be simple, clear, and straightforward. A work zone is the area between the “Begin Construction” sign and the “End Construction” sign. Further delineation may be added for long or short-term work zones. A short-term work zone is one that lasts only one day. Long-term work zone would constitute all others.

5. *How, if at all, are impacts to road users due to road construction and maintenance part of the management and operations considerations that are addressed in transportation plan development?*

AGC of Texas Response:

Impacts to road users are a concern and need to be addressed during the major investment study and public comment phase of a project. Though not always popular, some level of inconvenience is always present in a work zone. This consideration should be mitigated with the gains by adding capacity and other improvements to the facility. The focus of the analysis should deal with how traffic will be handled or routed through/around work zones during construction to minimize or mitigate impacts.

6. *To what extent should the metropolitan and statewide transportation planning processes address crosscutting policy issues that may contribute to increases in project costs (for example, the use of more durable materials, life-cycle costing, complete closure of facilities, information sharing on utilities, etc.)? Is it appropriate to consider the impact of construction and maintenance projects to road users in planning for future roadway improvements at the metropolitan level? At the statewide level? At the corridor level?*

AGC of Texas Response:

We find that these factors are already considered. National policy should also recognize that decisions regarding design life must ultimately face budgetary constraints. Forcing consideration of options that are known to be outside budget constraints (i.e. 50+ year life) just unnecessarily lengthens the planning and design process. Furthermore, this is NOT a work zone safety issue but a mobility issue. It is a strategy to hopefully reduce the number of work zones, which minimizes future traffic disruptions.

7. *What data and methods are currently available to address the above considerations? What else would be needed to support such considerations in the metropolitan and statewide transportation planning processes? At the corridor level?*

AGC of Texas Response:

There are a number of factors available such as measurements and estimations for life cycle costing, average daily traffic, motorist delay, traffic speeds, and historical maintenance costs. How these are addressed should be the responsibility of each DOT.

8. *How can the FHWA encourage agencies to incorporate the above considerations (life-cycle cost analysis, alternative project scheduling and design strategies, etc.) in the decision-making process for evaluating alternative project designs? What are the most appropriate ways to include these considerations in project design?*

AGC of Texas Response:

We find that these factors are already considered. National policy should also recognize that decisions regarding design life must ultimately face budgetary constraints. Forcing consideration of options that are known to be outside budget constraints (i.e. 50+ year life) just unnecessarily lengthens the planning and design process.

The National Policy should stipulate the use of constructability reviews in concert with prospective bidders or through trade associations.

9. *Can user cost be a useful measure to assess alternative means to design and implement work zones? What weight should agencies assign to user costs as a decision-making factor in the alternatives evaluation process? Should analytical tools, such as QuickZone, \16\ QUEWZ-98, \17\ etc., be used for the evaluation of various design alternatives and their estimated impact to the public? What other impact measures (delay, speed, travel time, crashes) should agencies estimate and use for alternatives evaluation?*

AGC of Texas Response:

“User costs” should be considered in high traffic or critical locations when establishing project duration or time limit. They should be used when developing incentives or disincentives for timely completion. They should NOT be considered in the design of the traffic control plan. We strongly believe that this places mobility as superior criteria over worker safety. This is not acceptable.

10. *Given the fact that utility delays have been cited as roadblocks to efficient project delivery, what should be done to address this issue?*

AGC of Texas Response:

Utility companies should be involved in the early in the stages of planning. Early involvement should give the utilities ample opportunity to program and execute relocation construction. Unfortunately, studies have indicated that the number one cause for project delays is attributed to timely utility relocation. DOT’s need financial recourse in the even this occurs. The process should provide a “carrot” and a “stick” for DOT use. The utility owners have abused the nation’s DOT without repercussion. The DOT’s need regulations that can provide them the authority to recoup damages incurred by the failure of a utility owner to act in a timely fashion.

11. *The current regulation specifies the requirement for TCPs for work zones, but does not address the issues of sustained traffic management and operations, or traffic enforcement methods and partnerships. Should the scope of TCPs be expanded to include such considerations? What are the most relevant practices or technologies that should be considered in planning for traffic management, enforcement and operations? What are the most appropriate ways to facilitate the inclusion of such considerations in traffic control planning?*

AGC of Texas Response:

DOT and other agencies should be encouraged to create public information and outreach programs. Public outreach programs should not be project specific unless it a very unique, complex situation. The outreach program should provide one-stop information for all transportation advisories. The program should be multi-media and utilize ITS facilities, if available.

The greatest failing in the construction of work zones lies with the type of temporary pavement markings used. The focus on pavement markings is completely backwards. We should not emphasize the removal of old marks. Marking removal defaces the pavement. There will always be residual indications of the pavement marks. We should focus on the installation of high quality temporary marks. There is a mindset that temporary marks are not as important as permanent. This leads to the decision to use low quality, cheaper products for WZ pavement marks. Because of the hazards that exist and the motorist is being asked to do something different, the temporary marks should be as good or better than the permanent.

12. *Should TCPs address the security aspects of construction of critical transportation infrastructure? Should TCPs address the security aspects of work zone activities in the vicinity of critical transportation or other critical infrastructure?*

AGC of Texas Response:

When security concerns are appropriate, they should be considered.

13. *How should TCPs address ADA requirements?*

AGC of Texas Response:

For the safety's sake, the first priority is to keep non-motorists out of the work zone if at all possible. Alternate paths should be clearly marked. When this is not possible and access must be granted, safety issues must be clearly addressed.

In addition to ADA requirements, there are concerns for the aging driver. As stated previously, highly reflective, high quality temporary pavement marks should be used. High intensity signing should be required. The visibility of worker garments should be addressed as well. Highly visible

vests should be worn by any worker in the worker zone whether an employee of the contractor or owner.

14. *Should more flexibility be allowed on who develops TCPs--State DOTs, municipalities, contractors or law enforcement agencies--and how should the responsibility for developing TCPs be assigned? Should certification be required for TCP developers? How can the owners and contractors share the roles, risk and rewards in developing TCPs and implementing and operating work zones?*

AGC of Texas Response:

No. The TCP should be developed by a licensed professional engineer in the employ of or contracted with the Owner. Constructability reviews by industry should be used to get practical input into the process.

TCP should be designed prior to bid. Drawings sealed by a licensed professional engineer should be included in the contract drawings for each contractor to bid upon. Provided a bid item for traffic control to compensate the contractor on a monthly basis for the duration of the project.

Two significant barriers exist at post-bid for improvements to the TCP:

1. Many DOT's have a mental barrier to any changes proposed by a contractor. There is a perception that proposed changes are based on financial motivation of the contractor and that the contractor will receive a "windfall" profit.
2. Liability concerns exist among contractors. Tort reform is needed to protect contractors in the event of lawsuits OR the DOT should assume responsibility for the proposed changes.

15. *To ensure roadway mobility and safety and work area safety, should mobility and safety audits be required for work zones?*

AGC of Texas Response:

No "audits" are necessary. National policy should promote standardized accident reporting. Owners should monitor work zone accidents.

Owner's designated engineer to make changes as appropriate. However, since most contractors hold their owners harmless, changes made to a TCP can be construed as an admission of design fault and be cause for large awards especially in the case of a catastrophic accident.

Changes to a TCP may represent significant changes in the character of the work. As such, changed conditions exist and a change order and appropriate compensation may be appropriate.

16. *How can we better communicate the anticipated work zone impacts and the associated mitigation measures to the public? Who--the State, local government, contractor, or other agency--should be responsible for informing the public?*

AGC of Texas Response:

As previously stated, DOT's should be encourage to have on-going public information and outreach programs. During the construction of all projects, the DOT's Public Affairs Office should handle all public outreach. The message to the public should be consistent and up-to-date. The PAO would provide one-stop information source for all traffic advisories. Only the most complex projects with significant traffic impacts should have special public outreach plans. This should be handled on a case-by-case basis.

17. *Should projects with substantial disruption include a public communication plan in the project development process? If so, what should such a plan contain?*

AGC of Texas Response:

Yes. See comments in Item 16 above.

18. *Should States and local transportation agencies report statistics on the characteristics of work zones (such as number of work zones, size, cost, duration, lanes affected, ADT, road classification, level of disruption and impacts on local network and businesses) to appropriate State or Federal agencies? If so, in what ways do you think this would be beneficial?*

AGC of Texas Response:

States and other transportation agencies should compile statistics about work zone performance through the standard reporting format. Caution is urged when creating new or additional administrative requirements on agencies already short of manpower.

19. *Should States and local transportation agencies report statistics on the mobility performance of work zones? Are typical mobility measures, such as, delay, travel time, traffic volumes, speed and queue lengths appropriate to analyze work zone mobility performance? What are the top three measures that are most appropriate?*

AGC of Texas Response:

This information should be collected by the controlling agencies. It should be used to evaluate the performance of various traffic control designs for future reference. Reporting is unnecessary.

20. *Are the currently used measures for safety (typically, crashes, fatalities and injuries) appropriate to analyze work zone performance? If not, what other measures should be considered? Are current mechanisms for collecting this information adequate? If not, how can we improve them?*

AGC of Texas Response:

Current measures are appropriate and satisfactory. Significant work needs to be done to standardize the tracking and reporting procedures. A standardized definition of the work zone and reporting format should improve the process.

Appendix B

Treatment of Pavement Drop-offs in Work Zones

Contents

Section 1 — Overview	B-2
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Section 1

Overview

These guidelines apply to construction zone work where continuous pavement edges or drop-offs exist parallel and adjacent to a lane used for traffic. These guidelines do not apply to short term operations. The *Texas Manual on Uniform Traffic Control Devices (TMUTCD)* defines short term operations as daytime work from one to twelve hours.

These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement.

Types of Treatment

Treatment may consist of either or both of the following:

- ◆ warning devices (such as signs or channelizing devices)
- ◆ protective barriers (such as concrete traffic barriers or metal beam guard fence).

Factors Affecting Treatment Choice

The type of treatment (warning device or protective barrier or both) selected depends on several factors, including engineering judgement. These guidelines are based on the following factors:

Factors Considered in the Guidelines		
Factor	Definition	Notes
edge condition	slope of the drop-off	For more information, see “Edge Condition” subheading below.
Lateral clearance	distance from the edge of the travel lane to the edge condition	See Figure B-1 for description.
edge height	depth of the drop-off	See Figure B-1 for description.

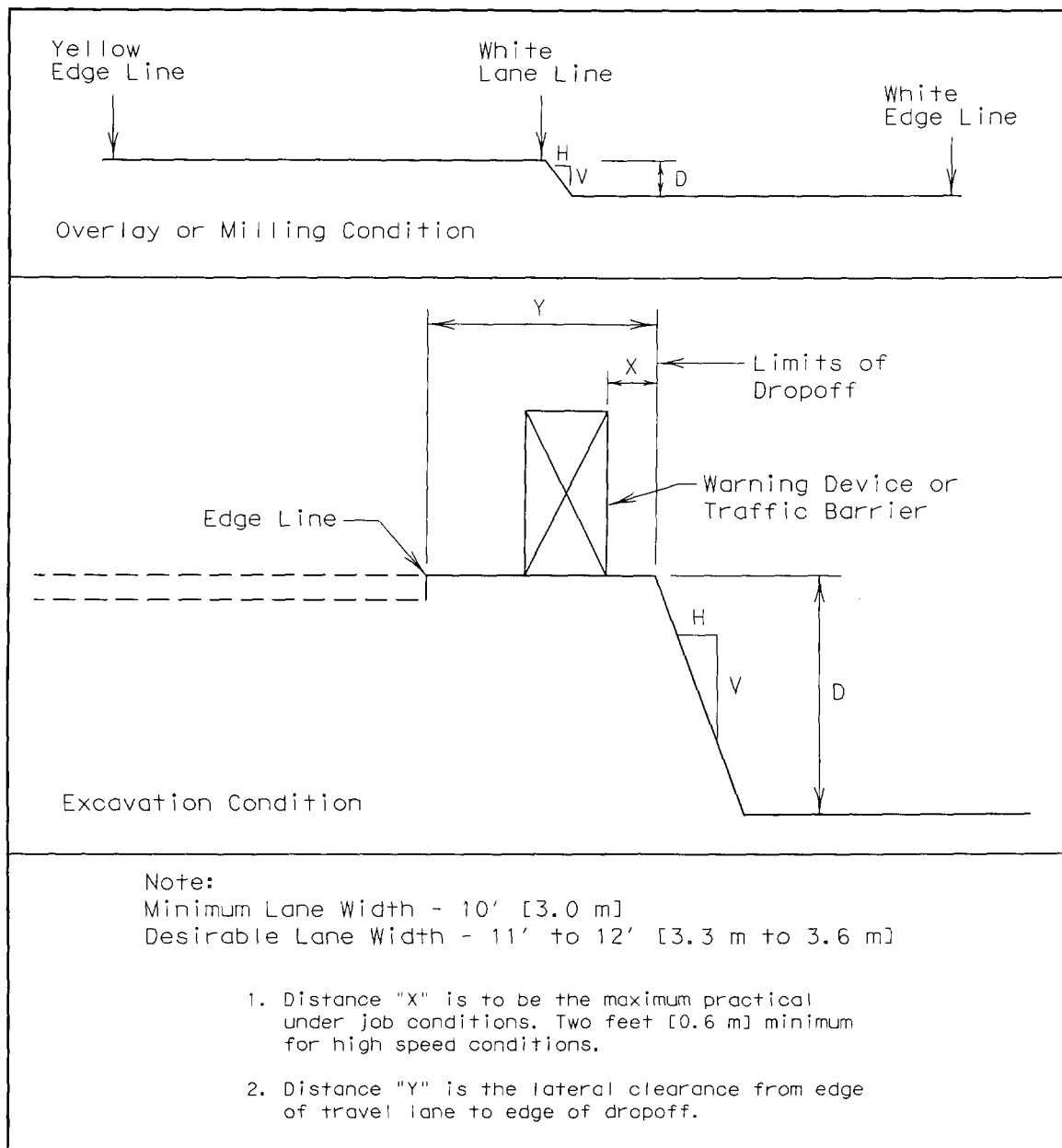


Figure B-1. Definition of Terms.

In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as:

- ◆ traffic mix
- ◆ posted speed in the construction zone
- ◆ horizontal curvature
- ◆ practicality of treatment options.

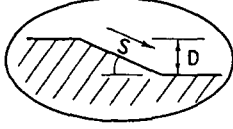
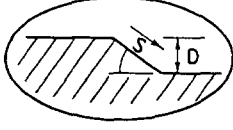
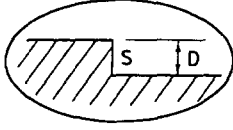
In urban areas where speeds of 30 mph [50 km/h] or less can be predicted for traffic in a particular construction zone, there may be a lesser need for signing, delineation, and barriers. Even so, sharp 90 degree edges greater than 2 inches [50 mm] in height, if located within a lateral offset distance of 6 feet [1.8 m] or less from a traffic lane, may indicate a higher level of treatment.

If distance *Y* (as described in Figure B-1) must be less than 3 feet [0.9 m], use of positive barrier may not be feasible. In such a case, if a positive barrier is needed (according to Figure B- 2), then consider one of the following:

- ◆ moving the lane of travel laterally to provide the needed space
- ◆ providing an edge slope such as Edge Condition I.

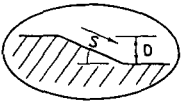
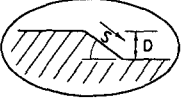
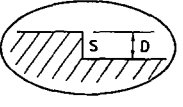
Edge Condition

“Edge condition” refers to the slope of the drop-off. The following table describes three edge condition types used in these guidelines. These edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the dimensions shown in the figures may be allowed by the engineer.

Edge Condition Types	
Condition Type & Description	Notes
<p>Edge Condition I</p>  <p>$S = 3:1$ or flatter slope rate ($H:V$)</p>	<p>Most vehicles are able to traverse an edge condition with a slope rate of 3 to 1 (horizontal to vertical) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.</p>
<p>Edge Condition II</p>  <p>$S = 2.99:1$ to $1:1$ slope rate ($H:V$)</p>	<p>Most vehicles are able to traverse an edge condition with a slope between 2.99 to 1 and 1 to 1 (horizontal to vertical) as long as D does not exceed 5 inches [125 mm]. Undercarriage drag on most automobiles will occur as D exceeds 6 inches [150 mm]. As D exceeds 24 inches [0.6 m], the possibility of rollover is greater for most vehicles.</p>
<p>Edge Condition III</p>  <p>S is steeper than $1:1$ slope rate ($H:V$)</p>	<p>Slopes steeper than 1 to 1 (horizontal to vertical) where D is greater than 2 inches [50 mm] can present a more difficult control factor for some vehicles, if not properly treated. For example, in the zone where D is greater than two up to 24 inches [50 mm to 0.6 m] different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential in the greater than 2 up to 5 inch [50 to 125 mm] zone. Trucks, particularly those with high loads, have more steering control differential in the greater than 5 up to 24 [50 mm to 0.6 m] zone. As D exceeds 24 inches [0.6 m], the possibilities of rollover is greater for most vehicles.</p> <p>NOTE: Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.</p>

Guidelines for Treatment

The following guidelines show the recommended treatment for given combinations of edge condition, lateral clearance, and edge height. Remember to consider other factors listed above and use engineering judgment.

Treatment Guidelines for Pavement Drop-offs in Construction Work Zones			
Edge Condition	Lateral Clearance	Edge Height	Usual Treatment (See Note 3)
I (slope is 3:1 or flatter) 	≤ 30 ft. [≤ 9 m]	0 to 1 in. [0 to 25 mm]	no treatment
		>1 to 2 in. [>25 to 50 mm]	CW 8-11 signs
		> 2 in. [> 50mm]	CW 8-9a or CW 8-11 signs plus channelizing devices
	> 30 ft. [> 9 m]	Any height	no treatment
II (slope is between 2.99:1 and 1:1) 	≤ 20 ft. [≤ 6 m]	0 to 1 in. [0 to 25 mm]	no treatment
		>1 to 2 in. [>25 to 50 mm]	CW 8-11 signs
		>2 to 5 in. [>50 to 125 mm]	CW 8-9a or CW 8-11 signs plus channelizing devices
		>5 to 24 in. [>125 to 600 mm]	CW 8-9a or CW 8-11 signs plus drums (see Note 1)
		> 24 in. [> 600 mm]	Check indications for positive barrier (See Note 2)
	> 20 ft. but ≤ 30 ft. [> 6 m but ≤ 9 m]	0 to 1 in. [0 to 25 mm]	no treatment
		>1 to 2 in. [>25 to 50 mm]	CW 8-11 signs
		> 2 in. [> 50mm]	CW 8-9a or CW 8-11 signs plus channelizing devices
	> 30 ft. [> 9 m]	Any height	no treatment
III (slope is steeper than 1:1) 	≤ 20 ft. [≤ 6 m]	0 to 1 in. [0 to 25 mm]	no treatment
		>1 to 2 in. [>25 to 50 mm]	CW 8-11 signs
		>2 to 24 in. [>50 to 600 mm]	CW 8-9a or CW 8-11 signs plus drums (see Note 1)
		> 24 in. [> 600 mm]	Check indications for positive barrier (See Note 2)
	> 20 ft. but ≤ 30 ft. [> 6 m but ≤ 9 m]	0 to 1 in. [0 to 25 mm]	no treatment
		>1 to 2 in. [>25 to 50 mm]	CW 8-11 signs
		> 2 in. [> 50mm]	CW 8-9a or CW 8-11 signs plus channelizing devices
	> 30 ft. [>9 m]	Any height	no treatment
<p>Note 1: Where restricted space precludes the use of drums, use channelizing devices. An edge fill may be provided to change the edge slope to that of the preferable Edge Condition I.</p> <p>Note 2: Check indications for positive barrier (Figure B-2). Where positive barrier is not indicated, CW 8-9a or CW 8-11 signs plus drums may be used (with Note 1 also applying) after consideration of other applicable factors.</p> <p>Note 3: Channelizing devices for the purpose of dropoff conditions are defined as: vertical panels, edge-line channelizers, or drums.</p>			

Use of Positive Barriers

Figure B-2 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic, may make positive barriers appropriate, even when the edge condition alone may not justify the barrier.

NOTE: An approved end treatment should be provided for any positive barrier end located within a lateral offset of 20 feet [6.0 m] from the edge of the travel lane.

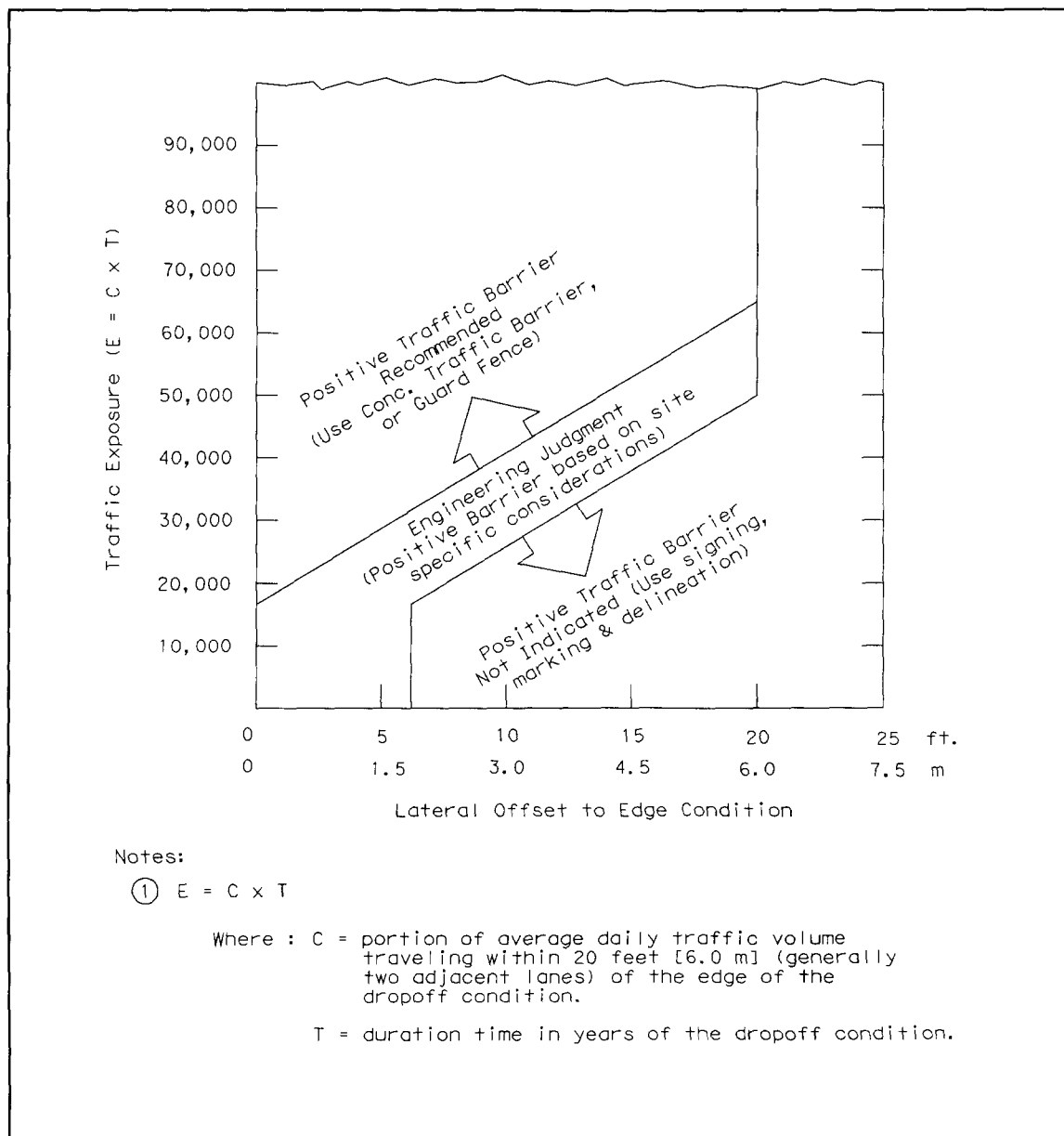


Figure B- 2. Conditions Indicating Use of Positive Barrier.